123

AF
#15
8-27-04
P.2

DOCKET NO. US010028 **PATENT**
CLIENT NO.: PHIL06-01782

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	:	Erwin B. Bellers
U.S. Serial No.	:	09/840,817
Filed	:	April 24, 2001
For	:	3-D RECURSIVE VECTOR ESTIMATION FOR VIDEO ENHANCEMENT
Group No.	:	2613
Examiner	:	Richard J. Lee

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING BY FIRST CLASS MAIL

Sir:

The undersigned hereby certifies that the following documents:

1. Appellants' Reply Brief Under 37 C.F.R. § 1.193 (in triplicate); and
2. Two (2) postcard receipts

relating to the above application, were deposited as "First Class Mail" with the United States Postal Service, addressed to Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on August 16, 2004.

Date: Aug 16, 2004 Kathy Hamilton
Mailer

Date: Aug. 16, 2004 William C. Munck
William A. Munck
Reg. No. 39,308

P.O. Drawer 800889
Dallas, Texas 75380
Phone: (972) 628-3600
Fax: (972) 628-3616
E-mail: *wmunck@davismunck.com*

DOCKET NO.: US 010028
CLIENT NO.: PHIL06-01782

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:	Erwin B. Bellers
Serial No.:	09/840,817
Filed:	April 24, 2001
For:	3-D RECURSIVE VECTOR ESTIMATION FOR VIDEO ENHANCEMENT
Group No.:	2613
Examiner:	Richard J. Lee

MAIL STOP APPEAL BRIEF - PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

APPELLANTS' REPLY BRIEF UNDER 37 C.F.R. § 1.193

This APPELLANTS' REPLY BRIEF UNDER 37 C.F.R. § 1.193 is filed in response to the EXAMINER'S ANSWER, which was mailed on June 16, 2004. This REPLY BRIEF is transmitted in triplicate.

Arguments in Response to the Examiner's Answer

A. CLAIMS 1, 2, 4-6, 8-10, 12-14, 17 and 18

Regarding independent Claims 1, 5, 9, 12 and 17, the Examiner acknowledges that the techniques of *de Haan* involve motion estimation and select a best candidate vector that indicates the best displacement offset. (*Examiner's Answer, Page 6, last line, through Page 7, line 4*). The Examiner then asserts that by selecting a best displacement offset for a block of pixels, in order to provide the best estimated block image, the *de Haan* reference discloses "enhancing a characteristic other than position," as recited in Claim 1 (*Examiner's Answer, Page 7, lines 4-10*). In light of this acknowledgement by the Examiner, the Appellant reiterates his assertion that *de Haan* teaches a method of motion compensation in a frame rate conversion process by enhancing the displacement, or position, of a block of pixels.

Furthermore, in responding to the Appellant's argument that the candidate vectors of the Appellant's invention are coefficients of enhancement algorithms, unlike *de Haan's* displacement vectors describing a positional relationship between subsequent fields, the Examiner asserts that one skilled in the art would find the claimed coefficients of enhancement algorithms in the coefficients within candidate vector $\underline{C}$ of equation (26) of *de Haan*. (*Examiner's Answer, Page 7, last paragraph*). The Appellant asserts that one skilled in the art would also recognize that candidate vector $\underline{C}$ of equation (26) is a displacement vector and, as such, any enhancement algorithm for which candidate displacement vector $\underline{C}$ provides the coefficients is enhancing the characteristic of

position. Thus, one skilled in the art would recognize that such a position enhancement mechanism would fall outside the limitations of the Appellant's claimed invention.

The *de Haan* reference teaches a motion compensation algorithm that selects a displacement vector to be applied to all pixel positions in a block. (*de Haan, Abstract and text accompanying equations (4) and (5)*). The *de Haan* reference does not describe an "enhancement unit enhancing a characteristic other than position of a selected pixel region" as recited in independent Claims 1, 5, 9, 12 and 17.

For these reasons, the Examiner has not shown that the proposed *de Haan* reference discloses, teaches, or suggests the Appellants' invention as recited in independent Claims 1, 5, 9, 12 and 17. As a result, independent Claims 1, 5, 9, 12 and 17 (and their dependent claims) are patentable over the *de Haan* reference. Accordingly, the Appellants respectfully request that the final rejection of Claims 1, 2, 4-6, 8-10, 12-14, 17 and 18 be withdrawn and that Claims 1, 2, 4-6, 8-10, 12-14, 17 and 18 be passed to allowance.

B. CLAIMS 3, 7, 11, 15, 16, 19, and 20

Regarding Claims 3, 7, 11, 15, 16, 19, and 20 the Examiner asserts that the claimed error computed by a selection unit is described in *de Haan* by the errors assigned to candidate displacement vectors using the summed absolute differences (SAD) criterion of equation (6). (*Examiner's Answer, Page 4, lines 6-8*). Next, the Examiner asserts that the claimed second penalty, which varies for each candidate enhancement vector, is described by the *de Haan* reference's penalty added to the error function related to the length of the difference vector between the candidate

displacement vector to be evaluated and some neighboring vectors. (*Examiner's Answer, Section 4, second paragraph, last five lines*).

Having thus explained the teaching of the two terms of the error function in equation (26) of *de Haan*, the Examiner then asserts that the third claimed element, a first penalty varying based upon the coefficients of each candidate enhancement vector, would be obvious from the penalties added to the error function in equation (26). Specifically, the Examiner asserts that it would be obvious that the penalty added to error function (26) also varies based upon the coefficients for each candidate displacement vector. The Examiner points to no suggestion or motivation, either in the *de Haan* reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the *de Haan* reference. Thus, the Appellant is left with the unanswered question of why, if error equation (26) already includes a penalty that varies based upon the coefficients of the candidate displacement vector (as asserted by the Examiner), would one of ordinary skill in the art be motivated to add the claimed additional penalty that also varies based upon the coefficients of each candidate enhancement vector.

Thus, a *prima facie* case of obviousness has not been established, according to M.P.E.P. § 2142, because, first, no suggestion or motivation has been shown, either in the *de Haan* reference itself or in the knowledge generally available to one of ordinary skill in the art, to modify the *de Haan* reference. Second, as argued with regard to the § 102 rejection of independent Claims 1, 5, 9, 12 and 17, the *de Haan* reference neither teaches nor suggests all the limitations of the Appellant's claimed invention.

For these reasons, the Examiner has not shown that the *de Haan* reference renders obvious the Appellants' invention as recited in Claims 3, 7, 11, 15, 16, 19, and 20. As a result, Claims 3, 7, 11, 15, 16, 19, and 20 are patentable over the *de Haan* reference. Accordingly, the Appellants respectfully request that the final rejection of Claims 3, 7, 11, 15, 16, 19, and 20 be withdrawn and that Claims 3, 7, 11, 15, 16, 19, and 20 be passed to allowance.

CONCLUSION

The Appellant has demonstrated that the present invention as claimed is clearly distinguishable over the prior art cited of record. Therefore, the Appellant respectfully requests that the Board of Patent Appeals and Interferences reverse the final rejection of the Examiner and instruct the Examiner to issue a notice of allowance of all claims.

The Commissioner is hereby authorized to charge any fees (including any extension of time fees) or credit any overpayments to Davis Munck Deposit Account No. 50-0208.

Respectfully submitted,

DAVIS MUNCK, P.C.

Date: Aug. 16, 2004

William A. Munck
Registration No. 39,308

P.O. Drawer 800889
Dallas, Texas 75380
(972) 628-3600 (main number)
(972) 628-3616 (fax)
E-mail: *wmunck@davismunck.com*